STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decided whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered " does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

   Timber Sale Name: **Sugaree VRH & VDT Timber Sale** *Agreement #:***30-082779**

2. Name of applicant: **Department of Natural Resources**

3. Address and phone number of applicant and contact person:

   Northwest Region
   919 North Township St.
   Sedro Woolley, WA 98284

   Contact Person: Laurie Bergvall
   Telephone: (360) 856-3500

4. Date checklist prepared: **October 15, 2008**

5. Agency requesting checklist: **Department of Natural Resources**

6. Proposed timing or schedule (including phasing, if applicable):

   a. *Auction Date:* **June 24, 2009**
   b. *Planned contract end date (but may be extended):* **September 30, 2010**
   c. *Phasing:* **Does not apply.**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Timber Sale

a. *Site preparation:* **Logging slash generated from this proposal may be piled or possibly burned to allow adequate planting spots upon completion of harvest. To be surveyed following harvest to assess need for chemical application.**

b. *Regeneration Method:* **Hand plant Douglas-fir and western redcedar at approximately 360 stems/acre, for regeneration harvest acres only, tentatively scheduled for February 2011.**

c. *Vegetation Management:* **To be surveyed 3-5 years following planting to assess need for treatment.**

d. *Thinning:* **To be assessed 12-15 years following planting to verify need for pre-commercial thinning.**

Roads: **Roads remaining active including the USFS 38, CW-1000, CW-1050 and PC-1300 will provide access for future land management activities. Roads will have routine annual maintenance, which may include ditch and culvert cleanout and road grading as needed, complying with the approved RMAP 2800010L.**

Rock Pits and/or Sale: **The Saint Stephen Pit will continue to be used for future timber sale road construction and road maintenance activities.**
Onsite rock may be used for road construction, if rock sources are discovered along haul routes or within the sale area.

Other: **Potential firewood collection or other non timber commercial products.**

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☒*303 (d) – listed water body in WAU:* **Middle Fork Nooksack** ☒*temp* ☐*sediment* ☐*pH* ☐*mercury* ☐*dissolved oxygen* ☐ *ammonia-N* ☒*fecal coliform* ☐*completed TMDL (total maximum daily load):* **see http://www.ecy.wa.gov/programs/wq/wqhome.html , report also available at the Northwest region office.**
☒*303 (d) – listed water body in WAU:* **Porter Creek** ☒*temp* ☐*sediment* ☐*pH* ☐*mercury* ☐*dissolved oxygen* ☐*ammonia-N* ☐ *fecal coliform* ☐*completed TMDL (total maximum daily load):*
☐*Landscape plan:*
☐*Watershed analysis:*
☐*Interdisciplinary team (ID Team) report:*
☒*Road design plan:* **at Northwest Region office.**
☐*Wildlife report:*
☒*Geotechnical report:* **at Northwest Region office, dated 11/12/2008.**
☒*Other specialist report(s):* **Forest Practice Pre Application Review Informal Conference Notes dated 09/26/2008.**
☐*Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):*
☐*Rock pit plan:*
☒*Other:* **Policy for Sustainable Forests, dated June 2006; Habitat Conservation Plan (HCP) and Environmental Impact Statement, dated September 1997; State Soil Survey, dated 1992; HCP Riparian Forest Strategy, July 2006; available at the Northwest Region office.**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. **Yes, the Nooksack Tribe has applied for portions of the Middle Fork Nooksack River Basin to be accepted on the Federal Register of historic places as a traditional cultural property.**

10. List any government approvals or permits that will be needed for your proposal, if known.
☐*HPA* ☐*Burning permit* ☐*Shoreline permit* ☐*Incidental take permit* ☒*FPA #* _____ ☐*Other:*

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. *Complete proposal description:* **The proposal area considered for this harvest activity is located on approximately 111 acres, located in sections 16, 17, and 18 of Township 38 North, Range 6 East, W.M, approximately 13 miles east of Deming, WA. The proposal is surrounded by DNR ownership and large industrial ownerships with small private ownerships in the area. Waters have all been typed according to the DNR Trust Forestland HCP Water Typing Key, WAC 222-16-031. The type 4 waters in Unit 1A and their buffers have been excluded from the timber sale harvest area. The type 4 waters in Units 1B and 1C will have the Riparian Forest Restoration Strategy applied in specific areas.**

The net harvest area of 88.2 acres was determined using a Trimble gps, laser, and hand compass. This includes 2.6 acres of right-of-way timber, 18.2 acres of variable retention harvest in Unit 1A, 24.4 acres of variable retention harvest in Unit 1B, 31.7 acres of variable retention harvest in Unit 1C and 11.3 acres of partial cut (thinning). The timber sale unit boundaries are defined by Riparian Management Zones (RMZ's) and topographic breaks. The difference in gross proposal area vs. net harvest area is due to changes made to the boundary location during sale layout in addition to areas excluded for unstable slopes, existing roads, and RMZ's. Slopes in the timber sale area range from 0-105%. Rock for new construction and maintenance requirements will come from the St. Stephen Pit on the USFS-38 Road located in Section 18 Township 38 North, Range 06 East.

Net harvest area: 88.2 acres
Estimated volume: 3,062 mbf
Variable Retention Harvest Area: 74.3 acres
Partial Cut Harvest Area: 11.3 acres (includes 5.3 acres of RMZ thin)
Right-of-way area: 2.6 acres

b. *Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.*
The pre-harvest stands consist of natural second growth timber, primarily Douglas-fir, western redcedar, silver fir, yellow cedarand western hemlock with components of red alder and bigleaf maple with an origin date of approximately 1944. The stand varies from 300 to 420 trees per acre across proposal. The average diameter of the Douglas-fir in this stand is 18 inches diameter at breast height (DBH) with an average height of 116 feet. The average diameter of western hemlock in these stands is 15 inches DBH with an average height of 90 feet. Stand volumes range from approximately 25-32 mbf/acre. Snags, cedar stumps, and down woody debris are attributes of this stand. There is an under story of salmonberry, sword fern, huckleberry, elderberry and moss. This information is taken from the DNR Forest Resource Inventory System and onsite observation.

Type of harvest: Variable retention harvest and variable density thinning
Logging System: Cable and ground-based harvesting systems

Objectives for the sale include generating revenue for the Common School (03) trust, maintain productivity of the site, minimize soil and water quality impacts, retain and enhance future short- and long-term forest structural diversity, protect habitats and functions of typed waters, and meet or exceed requirements of the HCP, Policy for Sustainable Forests, and Forest Practice Rules.

The intention of the proposed thinning is to accelerate development of the existing stand towards Desired Forest Future Conditions, primarily through the development of larger trees, increased down wood, and a multi-level canopy. The stand is presently in between the pole exclusion and large tree exclusion development stages. If left unmanaged the stand is not expected to release and take on older forest characteristics for many decades. Opening the canopy is expected to increase light levels, which will encourage the development of the shrub and herb layers. Species priorities for retention are Douglas-fir, western redcedar, western hemlock, and silver fir. Without implementation of this proposal, Desired Forest Future Conditions for this stand would not be attained until approximately year 2046, upon implementation, Desired Forest Future Conditions will be met in approximately year 2031, with the average DBH being 19-20 inches, average height being 130 feet.

c. *Road activity summary. See also forest practice application (FPA) for maps and more details.*

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
New Construction				0
Temporary Construction		4,208	1.9	0
Reconstruction				0
Abandonment				0
Bridge Install/Replace	0			0
Culvert Install/Replace (fish)	0			0
Culvert Install/Replace (no fish)	8			

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *(See timber sale map available at DNR region office, and/or color landscape/WAU map on the DNR website http://www.dnr.wa.gov under "SEPA Center.")*

a. Legal description: **The sale area is located in Section 16 and 17 of Township 38 North, Range 6 East, W.M.**

b. *Distance and direction from nearest town (include road names)* **Travel 3.6 miles east, on Highway 542 from Deming to Mosquito Lake Road. Turn right and head south on Mosquito Lake Road for 4.8 miles to USFS-38 Road, turn left. Travel east 4.3 miles on USFS-38 to the CW-1000. Turn left and travel 0.1 miles, turn left onto the CW-1050. Travel another 0.1 mile to Spur A.**

c. *Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.dnr.wa.gov under "SEPA Center.")*

WAU Name	WAU Acres	Proposal Acres
CLEARWATER CREEK	137,123	86
PORTER CANYON	19,789	2

13. *Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.dnr.wa.gov under "SEPA Center" for a broader landscape perspective.)*

This proposal is located on the northwest aspect mid slope of the Clearwater Creek drainage. A majority of the ownership in the Clearwater Creek WAU is federal. Large industrial landowners own the majority of adjacent private forested land within the Porter Canyon WAU. The information below refers to information taken from the State GIS, P&T, and FPARS databases dated October 1, 2008.

WAU Name	Total WAU Acres	DNR Managed Forested Acres	Percent DNR Managed Forestland	Private Managed Forest Acres	Percent Private Managed Forestland	Federal Ownership	Percent Federal
Clearwater Creek	13,713	6,600	48	811	6	6,302	46
Porter Canyon	19,789	6,582	33	13,207	67	-	-

Within the past 7 years in the Clearwater Creek WAU, there have been 29 acres of regeneration harvest and 76 acres of uneven-aged harvests on DNR managed land. Private landowners have had no Forest Practices Applications (FPA's) for regeneration harvests in the past 7 years. Private landowners have used a rotation age of 40-50 years of age.

Within the past 7 years in the Porter Canyon WAU, there have been 784 acres of regeneration harvest and 8 acres of un-even-aged harvests on DNR managed land. Private landowners have had several Forest Practices Applications (FPA's) approved for regeneration harvests in the past 7 years, totaling approximately 773 acres. Private landowners have also been approved for 421 acres of uneven-aged activities. Private landowners have used a rotation age of 40-50 years of age. Future activities on private land are unknown.

Environmental impacts due to harvest activities of past sales have been mitigated on a site-by-site basis according to the guidelines set out in the Forest Practice (F.P.) Rules. Environmental elements include impacts to the earth, surface and ground water, and wildlife habitat.

Earth: Areas exhibiting signs of instability were removed from the proposal area; harvest area and road construction will be located on stable areas only. Contract language will prevent activities or the use of equipment that may pose high risk to soil compaction and will restrict operations during periods of wet weather when rutting or erosion may occur. The sale area will be replanted within 2 years of harvest with Douglas-fir and western redcedar seedlings, thus minimizing potential soil erosion.

Surface and Ground Water: Clearwater Creek has a 200-foot Riparian Management Zone (RMZ). The 3 type 4 streams have 100 foot RMZ buffers. Type 4 streams will have the Riparian Forest Restoration Strategy implemented on them, which includes a 25-foot no touch buffer, with an additional 25 foot equipment limitation zone (for a total of 50 feet from the 100 year flood plain of each stream). RMZ's will serve to reduce the potential for mass wasting, preserve fish habitat, and maintain water quality. Contract language will prevent activities or the use of equipment that may pose high risk to soil compaction and surface erosion, and will suspend operations during period of wet weather, reducing impacts to water quality. Roads will be surfaced with rock and will have adequate drainage structures to maintain natural drainage patterns. New road construction will be minimized and the Spur A Road will be abandoned at completion of logging.

Wildlife: A minimum of 8 trees per acre, including trees that are structurally unique and from the largest diameter and dominant crown classes will be left as wildlife and green trees in the variable retention harvest area. Clumped green trees are located throughout the sale area and scattered green trees are larger diameter Douglas-fir, western redcedar, and western hemlock. Harvested areas will be site prepped and replanted within two planting seasons following harvest. RMZ's as well as areas removed for slope stability will also contribute to the structural diversity across the proposal area.

Planned land management activities in fiscal year 2010 within the Clearwater Creek WAU include road construction, RMAP activities, and silvicultural activities. Planned land management activities in fiscal year 2010 within the Porter Canyon WAU include road construction, RMAP activities, and silvicultural activities. These activities will continue to follow the Forest Practices Rules, Policy for Sustainable Forests, Implementation Agreement, Incidental Take Permits, and the HCP. This will ensure that all aspects of the environment are adequately protected and serve to minimize the chance of adverse cumulative environmental impacts.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☐Hilly, ☒Steep Slopes, ☐Mountainous, ☐Other:

1) *General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).* **The Clearwater Creek WAU is somewhat mountainous, ranging in elevation from below 800 feet to over 3,000 feet. Landforms are primarily of glacial origin either by erosion or by deposition. Most of the WAU is forested. The major timber types are second growth conifer/hardwood (Douglas-fir, western redcedar, silver fir and western hemlock). There are many young to intermediate aged stands both natural and planted throughout the WAU. Clearwater Creek is the major water body found in the central portion of the WAU. The climate is typical of the foothills of the western Cascades. The forest vegetation zone is the West Cascade hemlock zone with the major timber type being Douglas-fir with western redcedar and western hemlock as sub-species. A hardwood component of bigleaf maple, red alder and cottonwood is present at lower elevations.**

The Porter Canyon WAU is mountainous; it consists of valley bottom and steep sided mountains ranging in elevation from 600 ft to 1,200 ft. The Van Zandt Dike is the western border, the Clearwater drainage is the eastern boundary, the North Fork Nooksack River is the northern boundary, and the height of land between the Middle Fork Nooksack River and Hutchinson Creek defines the southern boundary. Landforms are of glacial, glacial fluvial, and fluvial origin. Most of the WAU is forested with scattered parcels of cleared private land in the valley bottoms. The major timber types are second growth conifer/hardwood (Douglas-fir, western redcedar, western hemlock and red alder). There are many Douglas-fir stands throughout the WAU. The Middle Fork Nooksack River is the major water body found in the central portion of the WAU. The climate is typical of the foothills of the western Cascades.

2) *Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).* **The proposal is located at 1,253-3,031 feet in elevation on a primarily southeastern aspect. Information based on local knowledge, aerial photos, and field verification.**

b. What is the steepest slope on the site (approximate percent slope)? **100%**

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres	Mass Wasting Potential	Erosion Potential
5603	V.GRAVELLY LOAM	30-60	37	MEDIUM	MEDIUM
2836	HARTNIT-GALLUP-ROCK OUTCROP-COMPLEX	50-80	26	No Data	No Data
8209	LOAM	60-90	12	HIGH	HIGH
0138	GRAVELLY LOAM	60-90	10	HIGH	HIGH
5602	V.GRAVELLY LOAM	8-30	2	INSIGNIFIC'T	LOW
5604	V.GRAVELLY LOAM	60-80	1	HIGH	HIGH

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

1) *Surface indications:* **Inner gorge slopes within the Clearwater WAU and sub basin 6 are characterized by two distinct stream parallel bands of slopes 70-80% and 80-110% separated by a distinct break in slope. Landslides have been common in the lower band and are best characterized as debris slides that generally**

vary from a few cubic yards to perhaps several tens of cubic yards. Landslides above the lower band are rare and represented by shallow debris slide scars.

2) *Is there evidence of natural slope failures in the sub-basin(s)?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:* **Natural shallow failures can be found in concave, convergent topography. Mass wasting is occurring along the edges of the glacial fluvial terraces perched above Clearwater Creek. Evidence of small deep-seated failures is visible on the edges of the terraces where type 4 streams have incised down through the terraces. Minor stream bank failures along inner gorges and small shallow-rapid slides are also common throughout the Clearwater WAU, sub-basin 6 according to aerial photo evidence.**

3) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:* **Shallow cut and fill slope failures.**

Associated management activity: **Erosion processes appear to be responsible for instability observed on the escarpment in glacial materials above Clearwater Creek. Previous road building and ground based yarding activity in the 1950's may have influenced slope failure though road cut and soil exposure in conjunction with water diversions. Pipe-flow and groundwater seepage were observed on several scarp faces following a large rain event. There are also locations where the Clearwater creek moves laterally and undercuts the northwest bank. Slope failure scars in glacial materials on streams that are tributary to Clearwater creek are believed to result from large rain events. Failures on inner gorges and very steep hill slopes underlain by bedrock typically initiate and translate as shallow debris slides. Steep slopes underlain by bedrock are present within and above the upper part of the proposal area, as well as on hill slopes on both sides of Clearwater creek in the general vicinity.**

4) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*
☒*No* ☐*Yes, describe similarities between the conditions and activities on these sites* **There is evidence that there are slope failures caused by natural processes on the slopes below the proposal area, along Clearwater creek due to the continued undercutting of the toe of the larger deep-seated feature. There is no evidence of historic failures within the proposed harvest area.**

5) *Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.* **The proposed boundary has been located on stable areas only. Roads were designed to minimize access cable landing locations for areas requiring cable yarding. Ground-based harvesting and yarding will be permitted where slopes are less than 25%. Ground-based falling & yarding, landing construction, and hauling may be restricted between November 1 and March 31st.**

No harvest activity will occur on the lower band of inner gorge slopes. Partial cut harvesting is the only activity proposed for the upper band of inner gorge slopes (trees will be removed from below, leaving an approximate spacing of 20 feet x 20 feet of the dominant and co dominant trees). Lead end suspension will be required.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: **1.9** *Approx. acreage new landings*: **2.0 acres** *Fill source:* **Native fill will be used where possible; materials for roads and landings will come from the Saint Stephen Pit.**

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. **Erosion could result from landing construction during periods of heavy rainfall or as a result of yarding during periods of saturation. Additionally, erosion could result if ditches and culverts are not properly installed and maintained during and after the harvest operation. Erosion could also occur if stream banks are damaged. Temporary structures that protect stream bank integrity is required for type 5 water crossings during cable and ground-based yarding operations. Road use during unfavorable weather conditions may contribute to an increased potential for surface erosion.**

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):* **None.**

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.) **To control road related erosion, road pioneering will not extend more than 500 feet beyond completed construction, culverts will be installed concurrently with construction of the road subgrade, and culvert outlets will not terminate on unprotected soils. All exposed soils resulting from road construction will be revegetated or a protective cover applied. Cut slope buttressing will be installed where required. Stream crossings were selected to minimize excavation. Newly constructed roads will be**

crowned, ditched and cross-drained, surfaced with rock, and constructed according to Forest Practice standards. The combination of harvesting schedule and recommended yarding strategies will alleviate or minimize erosion. Ground-based yarding, mechanized falling, landing construction, and hauling of forest products may be restricted to the dry times of the year. Contract and road plan provisions restrict operations during periods of unfavorable weather during any time of the year. All newly constructed roads will be abandoned upon completion of harvest activities.

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust *from truck traffic, rock mining, crushing or hauling*, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known. **No emissions are anticipated other than minor amounts of equipment exhaust and road dust created by truck traffic.**

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. **None.**

c. Proposed measures to reduce or control emissions or other impacts to air, if any: **None.**

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map available at DNR region office, or forest practice application base maps.)*

a) Downstream water bodies: **All streams within the proposal area are potential tributaries, via surface or subsurface flow to Clearwater Creek and Middle Fork of the Nooksack River.**

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Clearwater Creek	**1**	**1**	**200**
Unnamed Stream	**4**	**3**	**100**
Unnamed Stream	**5**	**2**	**N/A**

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers. **The type 4 streams will have a 100-foot Riparian Management buffer applied to them and Clearwater Creek will have a 200-foot no entry Riparian Management buffer applied. All existing road through RMZ's and WMZ's will be monitored during hauling to ensure ditchwater and road runoff will not enter or otherwise adversely affect water quality or RMZ/WMZ function. Corrective action such as straw bales, silt fencing, rock-lined ditches, and sediment traps will be installed/constructed if necessary.**

The type 4 streams will have the Type III Riparian Forest Restoration Strategy thinning implemented in specific locations where slope stability is not a concern. At a minimum these streams will have a 25-foot no entry RMZ's on them, with an additional 25-foot equipment limitation zone. RMZ thinning will occur on 5.3 acres. The prescription will require at least a Relative Density of 40 or at least 110 dominant or co-dominant trees per acre, which ever is larger. In addition, five conifer trees from within the inner zone, per thinned acre from the largest diameter class will be designated for snag recruitment or topping for riparian habitat enhancement.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.

☐ *No* ☒ *Yes (See RMZ/WMZ table above and timber sale map available at DNR region office.)*

Description (include culverts): **Harvesting will occur no closer than 25 feet to the type 4 streams and no closer than 200 feet to Clearwater Creek. There will be an equipment limitation zone of 30 feet adjacent to the type 5 streams within the harvest units. Temporary log crossings that protect streambank integrity are required for type 5 water crossings during yarding operations. Streambeds and banks shall be protected by the use of log puncheon or other approved structures at these crossing points and removed upon the completion of yarding activities. Trees will be felled to avoid streambank disturbance on all typed streams. Logs will have lead end suspension during cable yarding. Roads along the haul route pass through existing RMZ's and WMZ's. New road**

construction crosses 2 type 4 streams and 1 type 5 stream; culverts will be installed at all crossings. This work will be done per contract specifications.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. **No material will be placed in or dredged from surface waters or wetlands during the course of this proposal.**

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☐*No* ☒*Yes, description:* **All stream flow will be temporarily diverted through bypass culverts.**

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒*No* ☐*Yes, describe location:*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒*No* ☐*Yes, type and volume:*

7) *Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?* **Yes, there are steep slopes and incised stream channels in the Clearwater Creek WAU and sub-basin 6 that are susceptible to surface erosion. Mass wasting material involved in slope failures has a high potential for entering surface water. All units within the sale area have been designed to avoid areas of high slope failure potential; therefore, should not contribute to any surface erosion. Information was taken from the region soils specialist report, the state GIS SEPA WAU report dated October 1, 2008, and aerial photos.**

High Surface Erosion Potential: Clearwater WAU: 35%, Sub-basin 6: 23%
High Mass Wasting Potential: Clearwater WAU: 55%, Sub-basin 6: 44%

8) *Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?*
☐*No* ☒*Yes, describe changes and possible causes:* **There is evidence from state GIS data and aerial photos that show minor changes to the channels of some streams within the WAU, during peak flow events. There are shallow failures in some of the inner gorges of streams of the sub-basins due to inadequate drainage of old roads and railroad grades and most likely associated with 10-year storm events and peak flows. Several streams channels tributary to Clearwater Creek have been affected by mass wasting events and debris torrents. Also small segments of Clearwater Creek's channel have moved slightly. These changes appear to have followed large rain events.**

9) *Could this proposal affect water quality based on the answers to the questions 1-8 above?*
☒*No* ☐*Yes, explain:*

10) *What are the approximate road miles per square mile in the WAU and sub-basin(s)?*
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☒*No* ☐*Yes, describe:*

Clearwater Creek WAU: 2.4 mi/mi^2
Sub-basin 6: 1.1 mi/mi^2

Porter Canyon WAU: 3.6 mi/mi^2
Sub-basin 3: 2.9 mi/mi^2

The percentage of roads carrying water is unknown. The information below was taken from the DNR corporate WAU GIS data layer as of October 1, 2008

11) *Is the proposal within a significant rain-on-snow (ROS) zone? If not,* ***STOP HERE*** *and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☐*No* ☒*Yes, approximate percent of WAU in significant ROS zone.* **Clearwater Creek WAU: 57%**
Approximate percent of sub-basin(s): **Sub-basin 6: 79%**

12) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*

Approximately 96% of sub-basin 6 on DNR ownership is hydrologically mature.

It is not known how much private ownership in the WAU or sub-basin is hydrologically mature. This information was taken from the state GIS data layer dated October 1, 2008

13) *Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?*
☐*No* ☒*Yes, describe observations:* **See B.3.a.8.**

14) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.* **Forest lands that are hydrologically mature minimize impacts of rain-on-snow events. As directed by Procedure 14-004-060 Assessing Hydrologic Maturity two thirds of the forest lands within significant rain on snow zones needs to remain hydrologically mature. There are currently 90+% of the lands is within significant rain on snow hydrologically mature. The removal of approximately 76.9 acres is not expected to significantly impact peak flow events. The proposal is a variable retention harvest; therefore, precipitation that is normally dissipated in the tree canopy will come in contact with the understory brush and forest litter covering the forest floor. As a result, surface runoff may peak sooner during storm events than in adjacent standing timber. Within the partial cut portion of the proposed activity, approximately 60% of the canopy is to be retained; therefore, activities from this portion of the proposal are not expected to add to peak flow. It is not expected that this proposal will significantly increase peak flow impacts.**

15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*
☐*No* ☒*Yes, possible impacts:* **There are incised channels associated with type 4 streams below the sale area that could experience accelerated erosion if surface water is greatly increased.**

16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.* **The potential for stream flow increases are tempered by design of the proposed sale. Streams having perennial flow have been excluded from the timber sale. Those streams that are non-perennial are not expected to contribute to stream water quality degradation during or after harvest operations. Road, haul, and harvesting operations will be restricted during unfavorable precipitation conditions further reducing impact to water quality. Also see 3.a.1.c.**

b. Ground *Water*:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known. **Road cross drains may increase ground water recharge directly below culvert outlets.**

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. **Minor amounts of oil and other lubricants could be inadvertently spilled as a result of heavy equipment use. No lubricants will be disposed of on site.**

3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*
☐*No* ☒*Yes, describe:* **See 3a 15 above.**

a) Note protection measures, if any. **See 3a 16 above.**

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. **Intercepted surface storm water from rain and snow melt, and intercepted ground water from road cut banks will be collected into roadside ditches and discharged onto stable areas of the forest floor, or into natural drainage areas through cross drain culverts and ditches. Crowned rock surfacing on all roads will reduce sediments from entering natural waters. All discharged water associated with this proposal is tributary to Clearwater Creek via unnamed tributaries.**

2) Could waste materials enter ground or surface waters? If so, generally describe. **See B-3-b-2. It is unlikely waste materials will enter ground and surface waters provided appropriate Forest Practices outlined in the timber sale contract are used during landing construction and timber harvesting near all waters.**

a) *Note protection measures, if any.* **See B-3-b-2. Road maintenance, hauling, and ground-based operations may be restricted during the wet season. Timber will be felled to avoid stream bank disturbance on all streams. Temporary log crossings that protect streambank integrity are required for type 5 water crossings during yarding operations. Streambeds and banks shall be protected by the use of log puncheon or other approved structures at these crossing points and removed upon the completion of yarding activities. Timber will be felled away from typed streams. There will be a 30-foot equipment limitation zone applied to the type 5 streams within the timber sale boundaries. There will be a 50-foot equipment limitation zone applied to the 3 type-4 streams that are having the Riparian Forest Restoration strategy applied to them.**

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:
(See surface and ground water sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)

4. Plants

a. Check or circle types of vegetation found on the site:

☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☒*cottonwood,* ☐*western larch,* ☐*birch,* ☐other:
☒evergreen tree: ☒*Douglas fir,* ☐*grand fir,* ☒*Pacific silver fir,* ☐*ponderosa pine,* ☐*lodgepole pine,* ☒*western hemlock,* ☐*mountain hemlock,* ☐*Englemann spruce,* ☐*Sitka spruce,* ☒*red cedar,* ☒*yellow cedar,* ☒other: **yew**
☒shrubs: ☒*huckleberry,* ☒*salmonberry,* ☒*salal,* ☐*other:*
☐grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☐skunk cabbage, ☒*devil's club,* ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☒other types of vegetation: **sword fern**
☐*plant communities of concern:*

b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)* **Second-growth conifer and hardwoods will be removed from 76.9 net regeneration acres including right of way and 11.3 acres partial cut. Some immature trees and snags will be left unless they need to be felled for safety or operational reasons. Associated under story vegetation will be disturbed by logging or road building activities within the sale boundary. The harvested stand will be replaced with a managed Douglas-fir and western redcedar stand (hand planted) along with naturally regenerated western hemlock, red alder, and bigleaf maple. This managed stand will retain snags, dominant, co dominant and/or structurally unique trees to increase horizontal and vertical diversity over the landscape.**

The partial cut harvest will be a thinning from below and consist of at least a Relative Density of 40 or at least 110 dominant or co-dominant trees per acre, which ever is larger. A spacing of 20'x20' trees per acre is required as well. In addition, five conifer trees (from within the inner zone), per thinned acre from the largest diameter class will be designated for snag recruitment or topping for riparian habitat enhancement.

1) *Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: http://www.dnr.wa.gov under "SEPA Center.")* **The unit is bounded by mature +65 year old timber on DNR managed land on all sides consisting of Douglas-fir, western redcedar, and western hemlock.**

2) *Retention tree plan:* **Retention trees, including trees from the dominant crown class and largest diameter class will be left as wildlife and green trees. Retention trees will be clumped and scattered throughout the harvest area. Green trees will be retained to preserve structural diversity for wildlife habitat and include structurally unique, windfirm trees from diameter classes averaging between 18-36 inches DBH. Trees from dominant and co-dominant crown classes provide some components of multi-layered canopy. All snags (unless they need to be felled due to L&I safety considerations) are to be left.**

c. List threatened or endangered *plant* species known to be on or near the site. **The DNR TRAX database indicates no known threatened or endangered plant species.**

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: **See B.4.b.2 above. Native conifer species of similar site stock (~360 trees per acre) will be planted throughout the proposal area upon completion of the harvest. Naturally regenerated western hemlock and red alder will also be managed with planted conifers.**

Objectives of the DNR Riparian Restoration Strategy Type III thinning are Desired Future Forest Conditions consisting of older stands with high levels of structural complexity, creation of snags and recruitment of large down woody debris.

5. Animal

a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

birds: ☒hawk, ☐heron, ☒eagle, ☒songbirds, ☐*pigeon*, ☒other: osprey
mammals: ☒deer, ☒bear, ☐elk, ☐beaver, ☐other:
fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐*talus slopes*, ☐*caves*, ☐*cliffs*, ☐*oak woodlands*, ☐*balds*, ☐*mineral springs*

b. List any threatened or endangered species known to be on or near the site *(include federal- and state-listed species).* **DNR's TRAX System indicates no known threatened, endangered, or special concern species. The following databases were also checked for species or habitat occurrences: WDFW heritage database, WDFW owl database, and WDFW PHS point and polygon databases.**

c. Is the site part of a migration route? If so, explain.
☒*Pacific flyway* ☐*Other migration route:* *Explain if any boxes checked:* **All of Washington State is considered part of the Pacific Flyway. No impacts are expected.**

d. Proposed measures to preserve or enhance wildlife, if any: **Riparian Management Zones and native conifer trees will serve as habitat for several bird and wildlife species.**

1) *Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.* **See above 4b2.**

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. **Does not apply.**

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. **Does not apply.**

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: **Does not apply.**

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe. **There is minimal hazard for all of the above due to heavy equipment operations. There is a potential fire hazard if operating in moderate fire weather conditions during the summer until slash has broken down. The timber sale contract contains language that addresses hazardous materials spill prevention; hazardous material spill containment, control and cleanup; hazardous material release reporting.**

1) Describe special emergency services that might be required. **During harvest operations there may be a short term need for: Department of Ecology approved contract Haz-Mat clean up crews, Rural fire district crews, DNR forest fire response crews and Rural Fire District EMT's and Paramedics for responding to accidents or forest fires.**

2) Proposed measures to reduce or control environmental health hazards, if any: **See: B.7.a.1 above. Contract enforcement of forest fire protection rules.**

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? **Noise from trucks and logging equipment will be present while operating during daylight hours.**

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site. **There will be noise during daylight hours on a short-term basis from heavy equipment, log trucks, and chain saws during logging operations.**

3) Proposed measures to reduce or control noise impacts, if any: **None.**

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)* **State and privately owned commercial forestry land surrounds the proposal area.**

b. Has the site been used for agriculture? If so, describe. **No.**

c. Describe any structures on the site. **None.**

d. Will any structures be demolished? If so, what? **No.**

e. What is the current zoning classification of the site? **Commercial forestry.**

f. What is the current comprehensive plan designation of the site? **Commercial forestry and resource production.**

g. If applicable, what is the current shoreline master program designation of the site? **Does not apply.**

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify. **No.**

i. Approximately how many people would reside or work in the completed project? **Does not apply.**

j. Approximately how many people would the completed project displace? **Does not apply.**

k. Proposed measures to avoid or reduce displacement impacts, if any: **Does not apply.**

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: **The design of this project is consistent with current comprehensive plans and zoning regulations.**

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. **Does not apply.**

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. **Does not apply.**

c. Proposed measures to reduce or control housing impacts, if any: **Does not apply.**

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed? **Does not apply.**

b. What views in the immediate vicinity would be altered or obstructed? **None.**

1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*
☒*No* ☐*Yes, viewing location:*

2) *Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*
☒*No* ☐*Yes, scenic corridor name:*

3) *How will this proposal affect any views described in 1) or 2) above?* **The regeneration harvest will remove timber from 76.9 acres; views in this area will be buffered by timber more than 65 years old surrounding the proposal. They will be impacted until the planted conifer stand becomes established.**

No visual impact is anticipated in the partial harvest units.

c. Proposed measures to reduce or control aesthetic impacts, if any: **None.**

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
Does not apply.

b. Could light or glare from the finished project be a safety hazard or interfere with views?
Does not apply.

c. What existing off-site sources of light or glare may affect your proposal?
Does not apply.

d. Proposed measures to reduce or control light and glare impacts, if any:
Does not apply.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity? **Mushroom gathering, berry picking, hunting, and hiking.**

b. Would the proposed project displace any existing recreational uses? If so, describe: **No.**

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: **None.**

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe. **The Nooksack Tribe has identified the Middle Fork Nooksack River drainage as an area of traditional cultural use. It is identified on the state historic register as a traditional cultural property. DNR representatives have met with the Nooksack Tribe with the objective of agreeing to a plan for mitigating cultural values.**

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site. **Site visits with the Nooksack tribe resulted in areas identified or proposed for preservation within the proposal site.**

c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)
DNR representatives have provided information and maps to the Lummi and Nooksack tribes regarding this proposal. Local and national preservation registers, and DNR TRAX run indicate known historical or archeological sites on or near the proposal. Areas mentioned above will be excluded from the harvest area. Yarding roads will be placed to ensure protection of potentially significant sites remaining from original harvest. Any additional cultural resources identified during operations will be protected. Should archaeological materials or human remains be discovered during the course of operations, all work in the vicinity will be stopped and associated tribes and Office of Archaeological and Historic Preservation OAHP will be contacted.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any. **Access is via the USFS 38 Road and the CW-1000.**

1) Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)? **No.**

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop? **Does not apply.**

c. How many parking spaces would the completed project have? How many would the project eliminate? **Does not apply.**

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private). **Does not apply.**

1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?* **There will be increased truck traffic for rock hauling during landing construction and timber hauling during the timber harvest period.**

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. **No.**

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur. **An average of 10-15 roundtrip truck loads each day during harvest operation. Peak volumes will be during logging activities.**

g. Proposed measures to reduce or control transportation impacts, if any: **Safe operation of vehicles will be encouraged.**

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe. **No.**

b. Proposed measures to reduce or control direct impacts on public services, if any. **Restrict access during periods of extreme fire hazard. Operations will cease during periods of extremely low humidity (less than 30%).**

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other. **Does not apply.**

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. **Does not apply.**

C. **SIGNATURE**

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: _____ Date: 3/24/09
Title: